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ABSTRACT

Proprioceptive neuromuscular facilitation (PNF) is a commonly used stretching technique in rehabilitation and athletic competition. The most accepted benefit associated with PNF has been for increasing flexibility; however its definitive effect on muscle power and aerobic fitness remains controversial and relatively unknown. The purpose of this study was to determine the effect of prolonged use of PNF on flexibility at the hip, muscle power of the hamstring and aerobic capacity measured during submaximal exercise. Testing this required the participation of 10 adults split into two groups, who were tested for flexibility, muscle power, and aerobic capacity at three levels based on percentages of maximal heart rate. A 2 x 2 repeated measure analysis of variance was used to determine if there was a significant difference within and between the two groups ($p < 0.05$). A significant difference was detected between experimental and control groups for flexibility. The experimental group did not significantly improve muscle power and aerobic capacity pre- to post-testing. There was no significant group by trial interactions for flexibility, muscle power, and aerobic capacity. Post hoc analysis confirmed that a significant difference did occur between the two groups in flexibility at post-testing; concluding that with a larger sample, a significant group by trial interaction in flexibility could be expected. Results of this study conclude that PNF does affect flexibility however a larger sample size would be needed to more accurately determine if the application of PNF could result in possible differences in, muscle power, and aerobic capacity as well as group by trial interactions.